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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,719	07/10/2003	Hee-Gyoun Lee	#217 (3725)	3342

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EXAMINER	
ROJAS, BERNARD	
ART UNIT	**PAPER NUMBER**
2832	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/616,719	LEE ET AL.	
	Examiner	Art Unit	
	Bernard Rojas	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) *9-11,13,23-25,27,33-35,37 and 43-45* is/are withdrawn from consideration.

5)☒ Claim(s) *28-32 and 36* is/are allowed.

6)☒ Claim(s) *1-4,8,12,14-16,21,22,26,38,41,42 and 46* is/are rejected.

7)☒ Claim(s) *5-7,17-20,39 and 40* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11112004 07102003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Embodiment 3, claims 1-10, 12, 14-22, 28-32, 36, 38-42 and 46 in the reply filed on 11/06/2006 is acknowledged.

Claims 9 and 10 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species [Applicant elected Embodiment 3, directed toward a superconducting generator, claims 9 and 10 are directed toward a power cable], there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 11/06/2006.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 8, 12, 14-16, 21, 22, 26, 38, 41, 42 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Doi et al. [US 6,316,391].

Claim 1, Doi et al. discloses a high temperature superconductor comprising a drop in Jc of less than a factor of about 7 at a temperature of between about 30K to about 77K, and at a magnetic field of about 1 Tesla [77k, 1T, 80,000 A/cm2], when the magnetic field is applied normal to the surface of the superconductor, as compared to a Jc in the presence of no magnetic field [77K, 0T, 500,000 A/cm2, col. 10 lines 47-54],

and comprising a peak in Jc [500,000 A/cm2 compared to 48,000 A/cm2 for parallel, col. 11 lines 1-11] when a magnetic field is applied perpendicular to a surface of the superconductor.

Claim 2, Doi et al. discloses the high temperature superconductor of claim 1, wherein the superconductor comprises $RBa_2Cu_3O_{7-x}$, wherein R comprises at least one off yttrium (Y) [col. 2 lines 1-5].

Claim 3, Doi et al. discloses the high temperature superconductor of claim 2, wherein x is greater than zero but less than one [col. 2 lines 1-5].

Claim 4, Doi et al. discloses the high temperature superconductor of claim 1, wherein the superconductor comprises a superconducting film on a metal tape [Silver, col. 10 lines 28-30].

Claims 8 and 12, Doi et al. discloses the high temperature superconductor of claim 1, wherein the high temperature superconductor is utilized in a power generator [col. 1 lines 20-30].

Claim 14, Doi et al. discloses a high temperature superconductor having superior performance in the presence of a magnetic field, the superconductor comprising: a substrate [silver tape]; at least one buffer layer disposed on a surface of the substrate; at least one superconducting layer disposed over the at least one buffer layer [col. 1 lines 28-40], wherein the at least one superconducting layer comprises a rare-earth-Ba-Cu-O composition [col. 2 lines 1-5], and wherein the superconductor comprises a drop in Jc of less than a factor of about 7 at a temperature of between about 30K to about 77K, and at a magnetic field of about 1 Tesla [77k, 1T, 80,000 A/cm2], when the

magnetic field is applied normal to the surface of the superconductor, as compared to a Jc in the presence of no magnetic field [77K, 0T, 500,000 A/cm2, col. 10 lines 47-54], and comprises a peak in Jc [500,000 A/cm2 compared to 48,000 A/cm2 for parallel, col. 11 lines 1-11] when a magnetic field is applied perpendicular to a surface of the superconductor.

Claim 15, Doi et al. discloses the high temperature superconductor of claim 14, wherein the rare-earth-Ba-Cu-O composition comprises: at least one off yttrium (Y) [col. 2 lines 1-5].

Claim 16, Doi et al. discloses the high temperature superconductor of claim 14, wherein the at least one superconducting layer comprises a single layer of a rare-earth-Ba-Cu-O material comprising at least one off yttrium (Y) [col. 2 lines 1-5].

Claim 21, Doi et al. discloses the high temperature superconductor of claim 14, wherein the superconductor comprises a superconducting film on a metal tape [Silver, col. 10 lines 28-30].

Claims 22 and 26, Doi et al. discloses the high temperature superconductor of claim 14, wherein the high temperature superconductor is utilized in a power generator [col. 1 lines 20-30].

Claim 38, Doi et al. discloses a tape-formed oxide superconductor having minimal degradation of Jc when a magnetic field is applied normal to the superconductor's surface, the superconductor comprising: a metal tape substrate [silver tape]; at least one buffer layer overlying a surface of the metal tape substrate; at least one superconducting layer comprising $(YR)_1Ba_2Cu_{7-1}$ overlying the at least one buffer

layer [col. 2 lines 1-5], wherein R comprises a at least one of [rare-earth elements]: samarium (Sm), ytterbium (Yb), neodymium (Nd), gadolinium (Gd), europium (Eu), lanthanum (La), dysprosium (Dy), holmium (Ho), and mixtures thereof, and wherein x is greater than zero and less than one [col. 2 lines 1-5].

Claim 41, Doi et al. discloses the high temperature superconductor of claim 38, wherein the tape-formed oxide superconductor comprises a drop in Jc of less than a factor of about 7 at a temperature of between about 30K to about 77K, and at a magnetic field of about 1 Tesla [77k, 1T, 80,000 A/cm2], when the magnetic field is applied normal to the surface of the superconductor, as compared to a Jc in the presence of no magnetic field [77K, 0T, 500,000 A/cm2, col. 10 lines 47-54],

Claims 42 and 46, Doi et al. discloses the high temperature superconductor of claim 38, wherein the high temperature superconductor is utilized in a power generator [col. 1 lines 20-30].

Allowable Subject Matter

Claims 28-32 and 36 are allowed.

Claims 5-7, 17-20, 39 and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claim 28, the prior art of record does not teach nor suggest, in the claimed combination, a tape formed oxide superconductor having minimal Jc degradation when

a magnetic field is applied normal to the superconductor's surface having a metal tape substrate with a buffer layer, followed by a first $YBa_2Cu_3O_{7-x}$, superconducting layer, followed by a second $RBa_2Cu_3O_x$ superconducting layer, followed by a third $YBa_2Cu_3O_{7-x}$, superconducting layer, wherein R comprises at least one of samarium (Sm), ytterbium (Yb), neodymium (Nd), gadolinium (Gd), europium (Eu), lanthanum (La), dysprosium (Dy), holmium (Ho), and mixtures thereof, and x is greater than zero and less than one and wherein when a magnetic field is applied perpendicular to a surface of the tape-formed oxide superconductor, the tape-formed oxide superconductor has a peak Jc.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Rojas whose telephone number is (571) 272-1998. The examiner can normally be reached on M and W-F, 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Br

ELVIN ENAD
SUPERVISORY PATENT EXAMINER